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(54) Title: PEPTIDES FOR INHIBITION OF APOPTOSIS AND PHARMACEUTICAL COMPOSITIONS CONTAINING THEM

(57) **Abstract**

The present invention relates to an isolated and purified peptide of the RY domain having an amino acid sequence of general formula (I) comprising a sequence of the following amino acids: $X_1 - X_2 - X_3 - X_4 - X_1 - X_4 - X_4 - X_3 - X_1$, X_1 = Phe, Tyr, or any amino acid having a substituted aromatic residue; X_2 = Glu, Asp, Ser, or any amino acid having a $-(CH_2)_n-COO$ residue, wherein n = 0–3; X_3 = Asp, Thr, any aliphatic amino acid, or any of amino acids X_4; and X_4 = Arg, Lys, or any amino acid having a $-(CH_2)_n-NH_3^+$ residue, or a $-(CH_2)_n-NH-C(NH_3^+)NH_2$ residue wherein n = 0–4; as well as functional equivalents thereof. The invention relates also to pharmaceutical compositions comprising a compound of general formula (I), the use of said RY peptide and of said pharmaceutical composition in the preparation of a medicament and in methods for the treatment of disorders of inappropriate activation of apoptosis; for increasing the number of viable cells in a biological tissue; and in a method for the enhancement for the survival of biological cells. The invention also relates to a method for the preparation of a RY–peptide of general formula (I). Furthermore, the invention also relates to an in vitro assay system for the regulation of cell death by the Bcl–2 family of test compounds (as hereinbefore defined).